

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Chris Brody on 7/27/2010.

The specification of the application has been amended as follows:

In paragraph [0011], on page 4: ~~As set forth in claim 1,~~ A laminating apparatus of the present invention is characterized by that a laminating apparatus for forming a laminate layer on a recording surface of a recording media comprises a press bonding unit for laying a laminate material having a size larger than the recording medium over the same and thermally press bonding them together, wherein the laminate layer protruding outwards from the recording medium is transferred onto a transfer medium means disposed on the side of the surface of the recording medium opposite to the recording member.

In paragraph [0012], on page 4: ~~As set forth in claim 59,~~ A laminating method of the present invention is characterized by that a laminating method of forming a laminate layer on a recording surface of a recording medium, comprises laying a laminate material having a size larger than the recording medium over the same and thermally

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press bonding them together, and transferring the laminate layer protruding outwards from the recording medium onto a transfer medium means that is disposed on the side of the surface of the recording medium opposite to the recording surface.

In paragraph [0015], on page 5: In this case, if an attempt is made to carry out the laminating process with a fine finish without the necessity to carry out edging treatment after the laminating process of the recording medium, ~~as set forth in claim 2,~~ the laminating apparatus of the present invention further comprises a separating unit for moving the recording medium with the laminate layer adhered thereon relatively away from the transfer medium means so as to separate the transfer medium means from the surface of the recording medium opposite to the recording surface.

In paragraph [0016], on page 5: ~~As set forth in claim 3,~~ As the transfer medium means, it is possible to use an under film.

In paragraph [0017], on page 6: ~~As set forth in claim 4,~~ In the laminating apparatus of the present invention, it is possible to have an arrangement in which the press contacting means comprises a pair of conveying members for conveying the recording medium while thermally press bonding the same, and one of the pair of conveying members disposed on the side of the surface of the recording medium opposite to the recording surface to be conveyed functions as the transfer medium

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means, as well as functioning as a transfer conveying member, on which the laminate layer is transferred when in the thermally press bonding.

In paragraph [0020], on page 7: ~~As a representative example of the transfer conveying member, as set forth in claim 5,~~ it is possible to cite a roller member, a belt member, etc.

In paragraph [0021], on page 7: ~~As set forth in claim 6,~~ The laminating apparatus may further comprises a removing means for removing the laminate layer transferred onto the transfer conveying member. With this, it is possible to remove an excessive laminate layer, which is attached and stacked onto the transfer conveying member and thereby enables the thermally press bonding to be uniformly applied by the pair of conveying members, or the conveying to be carried out with a good condition.

In paragraph [0022], on page 7: ~~As set forth in claim 7,~~ The transfer conveying member may be detachably mounted to the press bonding unit. With this, it is possible to periodically detach the transfer conveying member and clean the same, or replace it with a new one.

In paragraph [0023], on page 7: ~~As set forth in claim 8,~~ In the laminating apparatus of the present invention, it is possible to employ an arrangement in which the laminate material is made up of a sheet-like substrate peelably laminated on the

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laminate layer, and the laminating apparatus further comprises a peeling-off unit for separating the laminate layer adhered onto the recording surface of the recording medium away from the substrate.

In paragraph [0026], on page 8: In this case, ~~as set forth in claim 9~~, the adhesive force of the laminate layer relative to the recording surface of the recording medium is preferably set to be stronger than the adhesive force of the laminate layer relative to the substrate when the recording surface of the recording medium is laminated with the laminate layer. According to the laminating apparatus having this arrangement, the laminate layer is unlikely to be peeled off from the recording surface along with the pulling of the substrate at the time when the substrate is peeled off from the laminate layer, and thus it is possible to smoothly peel off the substrate without damaging the laminate layer and the recording medium.

In paragraph [0027], on page 8: ~~As set forth in claim 10~~, In the laminating apparatus of the present invention, the transfer medium means is a film, and it is possible to use the laminate material and the transfer medium means, each of which are cut into sheet-like pieces each having a size larger than the recording medium.

In paragraph [0029], on page 9: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 11 and 62~~, the transferred width

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of the laminate layer transferred onto the transfer medium means is preferably about 3 mm or larger.

In paragraph [0030], on page 9: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 12 and 63~~, it is possible to employ an arrangement in which the thermally press bonding is carried out several times.

In paragraph [0033], on page 10: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 13 and 64~~, it is possible to employ an arrangement in which the thermally press bonding is again carried out for an intermediate with the substrate peeled off therefrom.

In paragraph [0035], on page 11: In this case, according to the laminating apparatus of the present invention, from the point of view of the finishing treatment, ~~as set forth in claim 14~~, the heating temperature and/or the press contact force at the second press bonding unit are preferably set to be lower than the heating temperature and/or the press contact force at the press bonding unit (first press bonding unit).

In paragraph [0036], on page 11: According to the laminating apparatus of the present invention, ~~as set forth in claim 15~~, it is possible to employ an arrangement, in which the press bonding unit (first press bonding unit) and/or the second press bonding

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unit each comprise a pair of rollers for causing a press contacting effect, and at least one of each pair of rollers, which acts on the laminate layer, comprises a roller having a soft layer on a rigid roller surface.

In paragraph [0038], on page 12: According to the laminating apparatus of the present invention, ~~as set forth in claim 16~~, it is possible to employ an arrangement, in which the press bonding unit (first press bonding unit) and/or the second press bonding unit each comprise a pair of rollers for causing a press contacting effect, and at least one of each pair of rollers is formed into a drum-like shape having an outer diameter that is reduced as it advances from the center portion towards the opposite ends in the axial direction, and is designed to be elastically deformed by being urged.

In paragraph [0041], on page 13: According to the laminating apparatus of the present invention, ~~as set forth in claim 17~~, it is possible to employ an arrangement, in which the press bonding unit (first press bonding unit) and/or the second press bonding unit each are provided with a pair of press contacting means for causing a press contacting effect, wherein one of each pair of press contacting means, which acts on the laminate layer, has an acting surface having an uneven surface configuration.

In paragraph [0043], on page 13: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 18 and 65~~, it is possible to employ an arrangement, in which plural recording media are supplied to have a

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precedent recording medium spaced with a given distance from a subsequent recording medium, and then thermally press bonded.

In paragraph [0046], on page 14: Alternatively, contrarily to this, according to the laminating apparatus and method of the present invention, ~~as set forth in claims 19 and 66~~, it is possible to employ an arrangement, in which the laminate material having a length in the first direction longer than the length of each recording medium in the first direction and a length in a second direction orthogonal to the first direction longer than the length of each recording medium in a second direction orthogonal to the first direction is used, and the recording media and the laminate material are supplied along the first direction so as to have a precedent recording medium kept substantially close to a precedent recording medium.

In paragraph [0050], on page 15: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 20 and 67~~, it is possible to employ an arrangement, in which the laminate material having a length in a first direction longer than the length of each recording medium in the first direction and a length in a second direction orthogonal to the first direction being substantially equal to the length of each recording medium in a second direction orthogonal to the first direction is used, and the recording media and laminate material are supplied to have the opposite ends of the laminate material in the second direction substantially matched

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to the opposite ends of each recording medium in the second direction, and are thermally press bonded.

In paragraph [0053], on page 16: In this case, according to the laminate apparatus of the present invention, ~~as set forth in claim 21,~~ it is possible to employ an arrangement, in which the laminate material supplying unit includes a storing means for storing the laminate material in such a manner as to be capable of supplying the same to the press bonding unit, and the storing means is designed to be capable of being replaced with a different storing means that stores a laminate material having a length in the second direction corresponding to the length of each recording medium in the second direction, so as to correspond to the size of each recording medium supplied from the recording medium supplying unit. In this case, ~~as set forth in claim 22,~~ the storing means preferably comprises a holder that axially supports the laminate material, which is lengthy in the first direction and is wound into a roll. With this, it is possible to successively supply the laminate material to have the opposite ends thereof in the second direction matched to the opposite ends of each recording medium in the second direction, which is supplied from the recording medium supply unit, by pulling out the laminate material in the first direction.

In paragraph [0054], on page 17: In another embodiment, ~~as set forth in claim 23,~~ it is possible to employ an arrangement, in which the recording medium supplying unit and the laminate material supplying unit are designed to be capable of respectively

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supplying the laminate material and the recording media towards the press bonding unit so as to bring the first direction of the laminate material and the recording media into the supplying direction thereof, and a limiting guide is provided at least on the upstream side of the press bonding unit so as to guide the opposite ends of each of the laminate material and each recording medium in the second direction, thereby limiting the movement of each of the laminate material and the recording media in the second direction.

In paragraph [0055], on page 17: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 24 and 68~~, it is preferable to employ an arrangement, in which at least one of the laminate material and the under film is preheated before thermally press bonding.

In paragraph [0058], on page 18: In this case, according to the laminating apparatus of the present invention, ~~as set forth in claim 25~~, it is possible to employ an arrangement, in which at least one of the pair of conveying members is any one of a roller member and a belt member that is heated for the thermally press bonding and has a surface moving for the conveyance, and any one of the laminate material and the under film or at least one of the laminate material and the under film, which is disposed on the side of any one of the roller member and the belt member, is partially wound around any one of the roller member and the belt member so as to provide a preheat area having a given width on the upstream side of a thermally press bonding point in a

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surface moving direction of any one of the roller member and the belt member and to be preheated at the preheat section.

In paragraph [0059], on page 19: ~~As set forth in claim 26,~~ It is possible to employ an arrangement, in which the apparatus further includes a free roller, which is rotatably disposed corresponding to the member to be heated, of the conveying members, in an area capable of being influenced by heat from the member to be heated, wherein any one of the laminate material and the under film or at least one of the laminate material and the under film is wound around the free roller so as to be further preheated by the free roller influenced by heat from the member to be heated, prior to thermally press bonding.

In paragraph [0060], on page 19: That is, ~~as set forth in claim 27,~~ it is possible to employ an arrangement, in which the press bonding unit comprises a pair of conveying members that convey recording media while thermally press heating the same, and a free roller that is disposed on the upstream side of the pair of conveying members and is designed to be heated, wherein the laminate material and/or the under film are wound around the free roller prior to thermally press bonding.

In paragraph [0061], on page 19: ~~As set forth in claim 28,~~ At least one of the pair of conveying members is designed to be heated for thermally press bonding, and the

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free roller is disposed in an area capable of being influenced by heat from the at least one of the pair of conveying members so as to be heated.

In paragraph [0062], on page 20: ~~As set forth in claim 29,~~ The free roller may have a surface layer on the surface of a roller body, which surface layer having a higher heat absorptivity than the roller body. As a material, which can be used for the surface of the free roller, it can be cited black alumite, as described above.

In paragraph [0063], on page 20: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 30 and 69,~~ it is possible to employ an arrangement, in which the transfer medium means is separated upon elapse of a given time after thermally press bonding.

In paragraph [0066], on page 21: According to the laminating apparatus of the present invention, ~~as set forth in claim 31,~~ it is possible to employ an arrangement, in which the apparatus further comprises a forcibly cooling means for cooling each laminate formed by thermally press bonding at the press bonding unit.

In paragraph [0070], on page 22: According to another embodiment, ~~as set forth in claim 32,~~ it is possible to employ an arrangement, in which the apparatus further comprises a conveying passage for conveying each laminate formed by thermally press bonding at the press bonding unit, wherein the conveying passage is defined by a guide

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member for guiding each laminate, and the guide member has a heat releasing property so as to constitute the forcibly cooling means.

In paragraph [0071], on page 23: According to the laminating apparatus of the present invention, ~~as set forth in claim 33~~, it is possible to employ an arrangement, in which the apparatus further comprises a guide member that is disposed upstream of a separating point of the separating unit, at which a laminated portion is separated from a non-laminated portion, so as to limit the movement of the laminated portion and the non-laminated portion in a direction crossing a first direction in the upstream side of the separating point.

In paragraph [0076], on page 25: Alternatively, according to the laminating apparatus of the present invention, ~~as set forth in claim 34~~, it is possible to employ an arrangement, in which the apparatus further comprises a guide member that is disposed corresponding to a separating point of the separating unit at which a laminated portion is separated from a non-laminated portion and its proximity, so as to limit the movement of the laminated portion at the separating point and its proximity, in a direction opposite to the moving direction of the non-laminated portion which moves in the downstream side of the separating point.

In paragraph [0080], on page 27: Alternatively, according to the laminating apparatus of the present invention, ~~as set forth in claim 35~~, it is possible to employ an

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arrangement, in which the apparatus further comprises a guide member that is disposed between an upstream side and a downstream side, of the separating unit, straddling over a separating point of the separating unit, at which a laminated portion is separated from a non-laminated portion, so as to limit the movement of the laminated portion and the non-laminated portion in a direction crossing a first direction in the upstream side of the separating point, and limit the movement of the laminated portion at the separating point and its proximity in a direction opposite to the moving direction of the non-laminated portion which moves in the downstream side of the separating point.

In paragraph [0086], on page 29: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 36 and 70~~, the separating step of the transfer medium means may be carried out after the peeling-off step of the substrate. Alternatively, contrarily to this, ~~as set forth in claims 37 and 71~~, the peeling-off step of the substrate may be carried out after the separation step of the transfer medium means.

In paragraph [0090], on page 30: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 38 and 72~~, the separation of the transfer medium means and the peeling-off of the substrate may be substantially simultaneously carried out.

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In paragraph [0091], on page 31: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 39 and 73~~, it is possible to employ an arrangement, in which the speed at which the transfer medium is separated is lowered for at least a leading edge side of the leading edge side and a tailing edge side, of each recording medium in a direction along which the transfer medium means is separated.

In paragraph [0094], on page 32: In this case, according to the laminating apparatus of the present invention, ~~as set forth in claim 40~~, there is provided the laminating apparatus, which is adapted to carry out the thermally press bonding and separating while conveying the recording media, wherein the speed at which the transfer medium means is separated is lowered for the leading edge side and the tailing edge side, of each recording medium by temporarily lowering the speed at which the recording media are conveyed.

In paragraph [0095], on page 33: Specifically, according to the laminating apparatus of the present invention, ~~as set forth in claim 41~~, it is preferable to employ an arrangement, in which sensors for detecting the leading edge and the tailing edge, of each recording medium are disposed at given positions in the upstream and downstream sides of the separating point in a conveying direction of the recording media, so as to change the conveying speed for the recording media.

In paragraph [0096], on page 33: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 42 and 74~~, it is possible to employ an arrangement, in which the speed at which the substrate is peeled off is lowered for at least a leading edge side of the leading edge side and a tailing edge side, of each recording medium in a direction along which the substrate is peeled off.

In paragraph [0098], on page 34: In this case, according to the laminating apparatus of the present invention, ~~as set forth in claim 43~~, there is provided the laminating apparatus, which is adapted to carry out the thermally press bonding and peeling-off while conveying the recording media, wherein the speed at which the substrate is peeled off is lowered for the leading edge side and the tailing edge side, of each recording medium by temporarily lowering the speed at which the recording media are conveyed.

In paragraph [0099], on page 35: Specifically, according to the laminating apparatus of the present invention, ~~as set forth in claim 44~~, it is possible to employ an arrangement, in which sensors for detecting the leading edge and the tailing edge, of each recording medium are disposed at given positions in the upstream and downstream sides of the peeling-off point in a conveying direction of the recording media, so as to change the conveying speed for the recording media.

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In paragraph [0100], on page 35: According to the laminating apparatus and method of the present invention, ~~as set forth in claims 45 and 75~~, it is possible to employ an arrangement, in which a transfer medium material having a sheet-like shape is used as the transfer medium means, and the transfer medium material is separated from each recording medium in an oblique direction relative to the same.

In paragraph [0102], on page 36: In this case, according to the laminating apparatus of the present invention, ~~as set forth in claim 46~~, there is provided the laminating apparatus, which is adapted to carry out the thermally press bonding, transferring and separating while conveying the recording media, the laminate material and the transfer medium material, wherein the recording media are supplied in a direction obliquely to the conveying direction, and the transfer medium material is separated in a direction parallel to the conveying direction.

In paragraph [0103], on page 36: Contrarily to this, according to the laminating apparatus of the present invention, ~~as set forth in claim 47~~, there is provided the laminating apparatus, which is adapted to carry out the thermally press bonding, transferring and separating while conveying the recording media, the laminate material and the transfer medium material, wherein the recording media are supplied in a direction parallel to the conveying direction, and the transfer medium material is separated in a direction obliquely to the conveying direction.

In paragraph [0104], on page 37: In the latter arrangement, ~~as set forth in claim 48~~, it is preferable to employ an arrangement, in which the separating is carried out via a lengthy separating guide member that is disposed along a width direction with respect to the conveying direction and has an edge inclined to the width direction with respect to the conveying direction.

In paragraph [0105], on page 37: According to another embodiment, ~~as set forth in claim 49~~, it is possible to employ an arrangement, in which the transfer medium means is a sheet-like transfer medium material, and the separating unit is designed to separate the transfer medium material towards the side of a surface of each recording medium opposite to the recording surface via a lengthy separating guide member that is disposed along a width direction with respect to the conveying direction, and an edge of the separating guide member is formed into a non-linear shape.

In paragraph [0106], on page 38: Thus, the edge of the laminate layer formed on the recording surface of each recording medium is finely finished in more secure manner, ~~in the same manner as the invention of claim 46~~.

In paragraph [0107], on page 38: According to the laminating apparatus of the present invention, ~~as set forth in claim 50~~, it is possible to employ an arrangement, in which the separating unit is provided with a guide member that is disposed in proximity and downstream of a separating point in the conveying direction of the recording media,

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at which separating point the surface of each recording medium opposite to the recording surface is separated from the transfer medium means, and the guide member has at least an upstream end disposed offset away from the conveying passage of the recording media of the upstream side of the guide member in a direction along which the transfer medium means is separated.

In paragraph [0108], on page 38: According to the laminating apparatus of the present invention, ~~as set forth in claim 51~~, it is possible to employ an arrangement, in which the separating unit is provided with a guide member that is disposed in proximity and downstream of a separating point in the conveying direction of the recording media, at which separating point the surface opposite to the recording surface of each recording medium is separated from the transfer medium means, the guide member has a first guide surface that extends in the conveying direction, and a second guide surface that is inclined at an oblique angle relative to the first guide surface towards the side opposite to the recording surface from the side of the separating point of the first guide surface, and the second guide surface of the guide member has an upstream end disposed offset away from the conveying passage of the recording media in the upstream side of the guide member, in a direction along which the transfer medium means is separated.

In paragraph [0110], on page 39: According to the laminating apparatus of the present invention, ~~as set forth in claim 52~~, it is possible to employ an arrangement, in

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which the apparatus further comprises a supplying unit that supplies the laminate material having a substrate peelably laminated on the laminate layer from a roll as a continuous sheet onto the recording surface of each recording medium, and for the roll of the laminate material in the supplying unit, a roll with the laminate layer wound thereinto to have the laminate layer facing inwardly is used.

In paragraph [0112], on page 39: In this case, from the point of view of automatic processing, ~~as set forth in claim 53~~, it is preferable to employ an arrangement, in which the apparatus further comprises a peeling-off unit for peeling off the substrate from the laminate layer of the laminate material, and a collecting unit for collecting the peeled substrate by winding it into a roll to have a side of the substrate, on which the laminate layer has been laminated, facing inwardly.

In paragraph [0113], on page 40: According to the laminating apparatus of the present invention, ~~as set forth in claim 54~~, it is possible to employ an arrangement, in which the apparatus further comprises a laminate material supplying unit that successively supplies a lengthy laminate material, wherein the press bonding unit is designed to be capable of being switched between a press bonding mode and a non-press bonding mode, and the laminate material supplied by a given feeding length under the non-press bonding mode can be pulled back into the laminate material supplying unit.

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In paragraph [0115], on page 41: In this case, ~~as set forth in claim 55~~, it is possible to employ an arrangement, in which the transfer medium means is a lengthy under film, the apparatus further comprises an under film supplying unit that successively supplies the under film and is so structured that the under film, which has been supplied under the non-press bonding mode, can be pulled back into the under film supplying unit by a given feeding length along with the pulling back of the laminate material.

In paragraph [0117], on page 41: Additionally, ~~as set forth in claim 56~~, it is preferable to employ an arrangement, in which the press bonding unit does not contact the supplied laminate material under the non-press bonding mode. Specifically, ~~as set forth in claim 57~~, there is further provided a roller that is disposed between the laminate material supplying unit and the press bonding unit and controls so that the press bonding unit does not contact the supplied laminate material when the press bonding unit is held in the non-press bonding mode.

In paragraph [0121], on page 42: According to the laminating apparatus of the present invention, ~~as set forth in claim 58~~, there is provided the laminating apparatus, which has the press bonding unit mounted in a housing and is adapted to form the laminate layer on the recording surface of each recording medium, wherein the housing is capable of being freely opened and closed, and the apparatus further comprises a

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locking means that prevents the housing from being opened when the press bonding unit is at a given temperature or higher.

2. The following is an examiner's statement of reasons for allowance: The prior art of record does not suggest a transfer medium that moves from one side (the recording side) of a medium to the opposite side (the non-recording side) to cut the portion of the laminate that is not adhered to the recording medium (the excess) away from the portion of the laminate that is adhered to the recording medium.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH T. AZIZ whose telephone number is (571)270-7658. The examiner can normally be reached on Monday through Thursday 8:00am-6:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna I. Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.